# MILES CITY FAA AIRPORT

## CUSTER COUNTY

The Miles City Airport is located approximately 2 miles northwest of Miles City at 46 25 48 N and 105 52 12 W (Site No. 19 on Map II-1). Elevation at the airport is 2,631 feet. Meteorological data have been collected at this site for many years by the Federal Aviation Administration.

These data, primarily collected for aviation and weather forecasting uses, consist of short-term (5 minutes or less) averages of wind speed and wind direction, as well as other meteorological parameters. Data were gathered once per hour. The data have been analyzed by Battelle Pacific Northwest Laboratories. Because of a change in recording interval, the data set was split into two parts for analysis: January 1, 1948, through December 31, 1964; and January 1, 1965, through December 31, 1978. Data from the latter period only were selected for inclusion in the *Montana Wind Energy Atlas.*

The data set for Miles City consists of summaries of observations made every third hour from January 1, 1965, through December 31, 1978. The anemometer was mounted on a ground mast at a height of 12.2 meters. The site is representative of much of the high ground along the Yellowstone River in southeastern Montana.

Average monthly wind speeds ranged from 9.8 miles per hour duringJuly, August, and November to 11.9 miles per hour in April. Average annual wind speed was 10.5 miles per hour.

Average monthly wind power ranged from 91.0 watts/$m^2$ in July and August to 163.0 watts/$m^2$ in April. Average annual wind power was 116.0 watts/$m^2$.

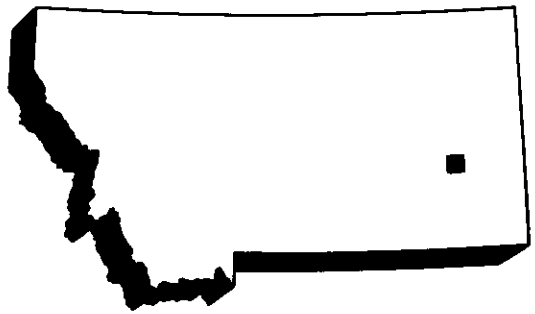

**Table IV - 27**

**Monthly Wind Speed Distribution**

## CUSTER COUNTY - MILES CITY FAA AIRPORT

**01/01/65 - 12/31/78**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CALM (<1.1) | 6.5 | 6.7 | 5.6 | 4.1 | 4.8 | 6.0 | 6.6 | 5.6 | 6.0 | 4.9 | 6.8 | 5.4 | 5.7 | CALM (<0.5) | |
| 1.1- 3.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.5- 1.4 | |
| 3.4- 5.4 | 6.3 | 5.3 | 5.4 | 3.1 | 3.9 | 5.2 | 4.9 | 4.9 | 5.6 | 6.0 | 5.6 | 5.8 | 5.2 | 1.5- 2.4 | S |
| S 5.6- 7.6 | 19.3 | 20.5 | 18.5 | 15.2 | 16.4 | 18.9 | 20.4 | 22.6 | 20.4 | 21.3 | 20.7 | 20.7 | 19.6 | 2.5- 3.4 | P |
| P 7.8- 9.8 | 24.1 | 23.9 | 21.7 | 20.9 | 21.0 | 22.3 | 25.7 | 25.0 | 23.9 | 24.8 | 25.6 | 24.8 | 23.6 | 3.5- 4.4 | E |
| E 10.1-12.1 | 15.8 | 15.9 | 14.8 | 17.0 | 16.2 | 15.5 | 16.1 | 16.2 | 15.9 | 15.2 | 16.0 | 15.2 | 15.8 | 4.5- 5.4 | E |
| E 12.3-14.3 | 9.3 | 9.6 | 10.4 | 10.5 | 11.0 | 11.3 | 9.8 | 9.8 | 9.0 | 9.0 | 8.9 | 9.6 | 9.9 | 5.5- 6.4 | D |
| D 14.5-16.6 | 5.4 | 5.7 | 6.4 | 6.9 | 7.3 | 6.1 | 5.9 | 5.3 | 5.7 | 5.2 | 5.3 | 5.6 | 5.9 | 6.5- 7.4 | |
| 16.8-18.8 | 5.8 | 5.3 | 6.7 | 9.5 | 9.2 | 7.5 | 5.8 | 5.2 | 6.3 | 5.9 | 4.7 | 5.9 | 6.5 | 7.5- 8.4 | M |
| M 19.0-21.0 | 3.4 | 3.4 | 4.8 | 5.9 | 4.9 | 4.0 | 2.4 | 2.2 | 3.5 | 3.1 | 2.5 | 3.3 | 3.6 | 8.5- 9.4 | E |
| I 21.3-23.3 | 2.3 | 1.8 | 2.7 | 3.4 | 2.9 | 2.2 | 1.1 | 1.5 | 1.9 | 2.2 | 1.8 | 2.0 | 2.2 | 9.5-10.4 | T |
| L 23.5-25.5 | 0.6 | 0.4 | 1.0 | 1.2 | 0.7 | 0.3 | 0.3 | 0.4 | 0.7 | 0.8 | 0.7 | 0.6 | 0.6 | 10.5-11.4 | E |
| E 25.7-27.7 | 0.4 | 0.3 | 0.5 | 0.6 | 0.6 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.3 | 0.4 | 0.4 | 11.5-12.4 | R |
| S 28.0-30.0 | 0.5 | 0.4 | 0.7 | 0.9 | 0.8 | 0.3 | 0.2 | 0.3 | 0.2 | 0.5 | 0.6 | 0.4 | 0.5 | 12.5-13.4 | S |
| / 30.2-32.2 | 0.1 | 0.3 | 0.4 | 0.3 | 0.1 | 0.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.3 | 0.1 | 0.2 | 13.5-14.4 | / |
| H 32.4-34.4 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 14.5-15.4 | S |
| O 34.7-36.7 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.5-16.4 | E |
| U 36.9-38.9 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 16.5-17.4 | C |
| R 39.1-41.2 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 17.5-18.4 | O |
| 41.4-43.4 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.5-19.4 | N |
| 43.6-45.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.5-20.4 | D |
| 45.9-56.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.5-25.4 | |
| 57.0-68.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.5-30.4 | |
| 68.2-79.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30.5-35.4 | |
| 79.4-90.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.5-40.4 | |
| >90.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | >40.4 | |
| AVERAGE SPEED (MPH) | 10.1 | 10.1 | 11.0 | 11.9 | 11.4 | 10.5 | 9.8 | 9.8 | 10.3 | 10.3 | 9.8 | 10.1 | 10.5 | | |
| AVERAGE SPEED (M/SEC) | 4.5 | 4.5 | 4.9 | 5.3 | 5.1 | 4.7 | 4.4 | 4.4 | 4.6 | 4.6 | 4.4 | 4.5 | 4.7 | | |
| AVERAGE WIND POWER (WATTS/M**2) | 114.0 | 111.0 | 138.0 | 163.0 | 139.0 | 106.0 | 91.0 | 91.0 | 108.0 | 113.0 | 106.0 | 109.0 | 116.0 | | |

ANEMOMETER HEIGHT = 40.0 FEET = 12.2 METERS

SOURCE: BATTELLE PACIFIC NORTHWEST LABORATORIES